

L Number	Hits	Search Text	DB	Time stamp
1	20731	caprolactam	USPAT; EPO; JPO; DERWENT	2004/02/11 06:48
2	65820	carbon adj monoxide	USPAT; EPO; JPO; DERWENT	2004/02/11 06:48
3	491	caprolactam and (carbon adj monoxide)	USPAT; EPO; JPO; DERWENT	2004/02/11 06:48
4	183376	palladium or pd	USPAT; EPO; JPO; DERWENT	2004/02/11 06:48
5	170	(caprolactam and (carbon adj monoxide)) and (palladium or pd)	USPAT; EPO; JPO; DERWENT	2004/02/11 06:48
6	128	5-cyanovaler\$	USPAT; EPO; JPO; DERWENT	2004/02/11 06:48
7	19050	group adj VIII	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
8	541	pentenenitrile	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
9	61	5-cyanovaler\$ and pentenenitrile	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
10	4944	carbonylation	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
11	0	049554.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
12	46	5-cyanovaleric	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
13	91974	hydrogenation	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
14	1440	6-aminocaproic	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
15	177	(558/441).CCLS.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
16	0	((("540/485").CCLS.) and 5-cyanovaleric	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
17	1	"5616773".PN.	USPAT	2004/02/11 06:49
18	2	5780623.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
19	2	5973406.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
20	14	caprolactam and (5-cyanovaler\$ and pentenenitrile)	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
21	39	(carbon adj monoxide) and (5-cyanovaler\$ and pentenenitrile)	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
22	29	(palladium or pd) and ((carbon adj monoxide) and (5-cyanovaler\$ and pentenenitrile))	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
23	2	5679831.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
24	2	6156934.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49

25	10	"0495548"	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
26	4	49554.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
27	1	0049554.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
28	40	caprolactam and 5-cyanovaler\$	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
29	26	caprolactam and 5-cyanovaleric	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
30	1	"4636576".PN.	USPAT	2004/02/11 06:49
31	17	6-aminocaproic and 5-cyanovaleric	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
32	3	9815529.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
33	2	5679831.pn.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
34	156	(540/485).CCLS.	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
35	6	((("558/441").CCLS.) and 5-cyanovaleric	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
36	67	((("540/485").CCLS.) and caprolactam	USPAT; EPO; JPO; DERWENT	2004/02/11 06:49
37	2	6346640.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 06:49
38	3	"19840253"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 08:33
39	362	((558/441).CCLS.) or ((540/485).CCLS.)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 06:49
40	0	"001014055"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 07:49
41	69	"0014055"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 07:49
42	3	9947528.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 08:35
43	2	9841495.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 08:56
44	1	9649434.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 08:56
45	2	9619434.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2004/02/11 08:57

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition
1	BRS	L1	20731	caprolactam	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:48		
2	BRS	L2	65820	carbon adj monoxide	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:48		
3	BRS	L3	491	caprolactam and (carbon adj monoxide)	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:48		
4	BRS	L4	18337 6	palladium or pd	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:48		
5	BRS	L5	170	(caprolactam and (carbon adj monoxide)) and (palladium or pd)	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:48		
6	BRS	L6	128	5-cyanovaler\$	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:48		
7	BRS	L7	19050	group adj VIII	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
8	BRS	L8	541	pentenenitrile	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
9	BRS	L9	61	5-cyanovaler\$ and pentenenitrile	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
10	BRS	L10	4944	carbonylation	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		

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	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition
11	BRS	L11	0	049554.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
12	BRS	L12	46	5-cyanovaleric	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
13	BRS	L13	91974	hydrogenation	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
14	BRS	L14	1440	6-aminocaproic	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
15	IS&R	L15	177	(558/441).CCLS.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
16	BRS	L16	0	((("540/485").CCLS.) and 5-cyanovaleric	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
17	BRS	L17	1	"5616773".PN.	USPAT	2004/02/11 06:49		
18	BRS	L18	2	5780623.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
19	BRS	L19	2	5973406.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
20	BRS	L20	14	caprolactam and (5-cyanovaler\$ and pentenenitrile)	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
21	BRS	L21	39	(carbon adj monoxide) and (5-cyanovaler\$ and pentenenitrile)	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		

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	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition
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23	BRS	L23	2	5679831.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
24	BRS	L24	2	6156934.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
25	BRS	L25	10	"0495548"	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
26	BRS	L26	4	49554.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
27	BRS	L27	1	0049554.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
28	BRS	L28	40	caprolactam and 5-cyanovaler\$	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
29	BRS	L29	26	caprolactam and 5-cyanovaleric	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
30	BRS	L30	1	"4636576".PN.	USPAT	2004/02/11 06:49		
31	BRS	L31	17	6-aminocaproic and 5-cyanovaleric	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
32	BRS	L32	3	9815529.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		

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	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition
33	BRS	L33	2	5679831.pn.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
34	IS&R	L34	156	(540/485).CCLS.	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
35	BRS	L35	6	((558/441).CCLS.) and 5-cyanovaleric	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
36	BRS	L36	67	((540/485).CCLS.) and caprolactam	USPAT ; EPO; JPO; DERWE NT	2004/02/11 06:49		
37	BRS	L37	2	6346640.pn.	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 06:49		
38	BRS	L38	3	"19840253"	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 08:33		
39	BRS	L39	362	((558/441).CCLS.) or ((540/485).CCLS.)	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 06:49		
40	BRS	L40	0	"001014055"	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 07:49		

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	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition
41	BRS	L41	69	"0014055"	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 07:49		
42	BRS	L42	3	9947528.pn.	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 08:35		
43	BRS	L43	2	9841495.pn.	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 08:56		
44	BRS	L44	1	9649434.pn.	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 08:56		
45	BRS	L45	2	9619434.pn.	USPAT ; US-PG PUB; EPO; JPO; DERWE NT	2004/02/11 08:57		

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42	0
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PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS	3	SEP 09	CA/CAPLUS records now contain indexing from 1907 to the present
NEWS	4	DEC 08	INPADOC: Legal Status data reloaded
NEWS	5	SEP 29	DISSABS now available on STN
NEWS	6	OCT 10	PCTFULL: Two new display fields added
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NEWS	9	NOV 24	MSDS-CCOHS file reloaded
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NEWS	12	DEC 09	Experimental property data collected by CAS now available in REGISTRY
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NEWS	14	DEC 17	DGENE: Two new display fields added
NEWS	15	DEC 18	BIOTECHNO no longer updated
NEWS	16	DEC 19	CROPU no longer updated; subscriber discount no longer available
NEWS	17	DEC 22	Additional INPI reactions and pre-1907 documents added to CAS databases
NEWS	18	DEC 22	IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields
NEWS	19	DEC 22	ABI-INFORM now available on STN
NEWS	20	JAN 27	Source of Registration (SR) information in REGISTRY updated and searchable
NEWS	21	JAN 27	A new search aid, the Company Name Thesaurus, available in CA/CAPLUS
NEWS	22	FEB 05	German (DE) application and patent publication number format changes
NEWS EXPRESS			DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003
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=> file reg

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 08:27:02 ON 11 FEB 2004

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STRUCTURE FILE UPDATES: 10 FEB 2004 HIGHEST RN 648858-13-3

DICTIONARY FILE UPDATES: 10 FEB 2004 HIGHEST RN 648858-13-3

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Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=>

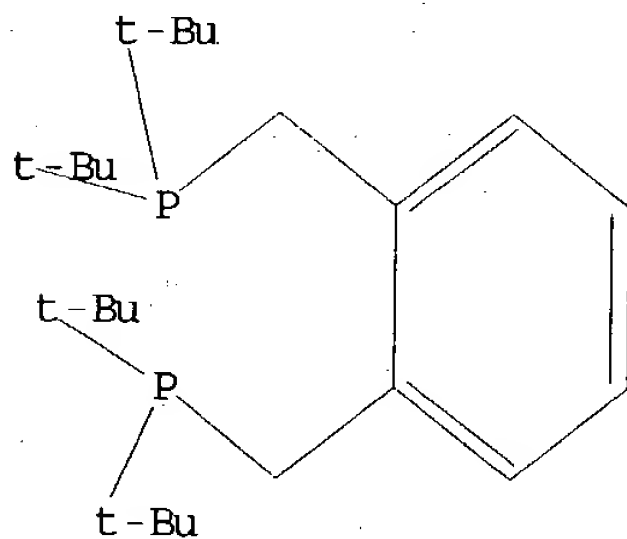
Uploading C:\Archived files\09804891\09804891 AF ligand.str

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> search l1 exact full

FULL SEARCH INITIATED 08:27:35 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 9 TO ITERATE

100.0% PROCESSED 9 ITERATIONS

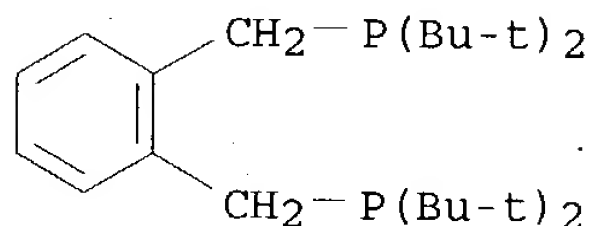
SEARCH TIME: 00.00.01

1 ANSWERS

L2 1 SEA EXA FUL L1

=> d scan

L2 1 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [1,2-phenylenebis(methylene)]bis[bis(1,1-dimethylethyl)- (9CI)
MF C24 H44 P2

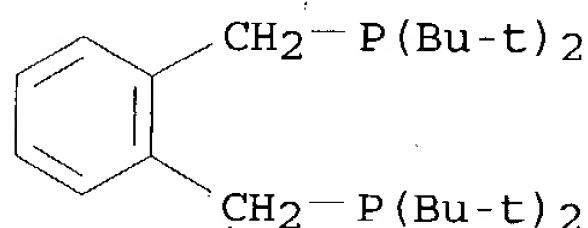


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> d 12

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 121954-50-5 REGISTRY
CN Phosphine, [1,2-phenylenebis(methylene)]bis[bis(1,1-dimethylethyl)- (9CI)
(CA INDEX NAME)
OTHER NAMES:
CN 1,2-Bis[(di-tert-butylphosphino)methyl]benzene
FS 3D CONCORD
MF C24 H44 P2
SR CA
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, USPAT2, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

16 REFERENCES IN FILE CA (1907 TO DATE)
16 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

55.28

55.49

FILE 'CAPLUS' ENTERED AT 08:28:32 ON 11 FEB 2004

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FILE COVERS 1907 - 11 Feb 2004 VOL 140 ISS 7
FILE LAST UPDATED: 10 Feb 2004 (20040210/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> l2

L3 16 L2

=> d l3 1-16 ti

- L3 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for making a 5-cyanovaleric acid ester, adipic acid or dimethyl adipate
- L3 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture of dialkyl ketones by reductive carbonylation of α -olefins
- L3 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process for making 5-cyanovaleric acid, adipic acid or dimethyl adipate
- L3 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Method and catalysts containing bidentate phosphine ligands for the carbonylation of pentenoic acid and its derivatives into adipic acid and its derivatives
- L3 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Characterization and Dynamics of $[\text{Pd}(\text{L-L})\text{H}(\text{solv})]^+$, $[\text{Pd}(\text{L-L})(\text{CH}_2\text{CH}_3)]^+$, and $[\text{Pd}(\text{L-L})(\text{C}(\text{O})\text{Et})(\text{THF})]^+$ ($\text{L-L} = 1,2-(\text{CH}_2\text{P}^i\text{Bu}_2)_2\text{C}_6\text{H}_4$): Key Intermediates in the Catalytic Methoxycarbonylation of Ethene to Methylpropanoate
- L3 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI The NMR study on trans-trans-dibenzylideneacetone complex of palladium(II)
- L3 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for the carbonylation of pentenenitrile into 5-cyanovaleric acid or its esters
- L3 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Carbonylation of ethylenically unsaturated compounds
- L3 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process for the preparation of bisphosphines
- L3 ANSWER 10 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and Palladium-bidentate phosphine ligand catalysts for the carbonylation of ethylene into propionic acid and its esters
- L3 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Carbonylation of ethylene and stable catalyst system containing bidentate phosphine compounds for
- L3 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Preparation and fluxional behavior of η^3 -methylbenzyl platinum and

palladium complexes

- L3 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Synthesis of coordinatively unsaturated diphosphine nickel(II) and palladium(II) β -agostic ethyl cations: x-ray crystal structure of $[\text{Ni}[\text{tert-Bu}_2\text{P}(\text{CH}_2)_2\text{PBu-tert}_2](\text{C}_2\text{H}_5)] [\text{BF}_4]$
- L3 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Ligand control of agostic metal-hydrogen-carbon three-center, two electron bonding in bicyclo[2.2.1]hept-2-yl complexes of platinum and palladium. X-ray crystal structures of $[\text{Pt}(\eta^2\text{-C}_7\text{H}_{10})\{\text{tertBu}_2\text{P}(\text{CH}_2)_2\text{PtertBu}_2\}]$ and $[\text{Pt}(\text{C}_7\text{H}_{11})\{\text{tertBu}_2\text{P}(\text{CH}_2)_2\text{PtertBu}_2\}] [\text{BPh}_4]$
- L3 ANSWER 15 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Control of intramolecular β -hydrogen migration in coordinatively unsaturated (diphosphine)platinum ethyl cations
- L3 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Coordinatively unsaturated diphosphine platinum(II) alkyl cations: a new class of β -agostic complexes

=> d l3 1-16 ti fbib abs

- L3 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for making a 5-cyanovaleric acid ester, adipic acid or dimethyl adipate
AN 2003:435358 CAPLUS
DN 139:7366
TI Process and catalysts for making a 5-cyanovaleric acid ester, adipic acid or dimethyl adipate
IN Bunel, Emilio E.; Clark, David A.
PA USA
SO U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003105348	A1	20030605	US 2001-997506	20011119
				US 2001-997506	20011119

- OS MARPAT 139:7366
AB In a process for making (1) a 5-cyanovaleric acid ester $\text{NCCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{R}'$ ($\text{R}' = \text{H}$, C1-12 alkyl; e.g., Me 5-cyanovalerate), or (2) adipic acid, or (3) di-Me adipate, one uses as the substrate (A) 3-pentenitrile, (B) 3-pentenoic acid, or (C) Me 3-pentenoate, resp., by contacting the substrate with carbon monoxide and a nucleophile in the presence of a Group VIII metal (e.g., palladium), a bidentate diphosphine ligand [e.g., 1,2-bis(di-tert-butylphosphinomethyl)benzene], and an acid promoter (e.g., methanesulfonic acid).

- L3 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Manufacture of dialkyl ketones by reductive carbonylation of α -olefins
AN 2003:114232 CAPLUS
DN 138:172242
TI Manufacture of dialkyl ketones by reductive carbonylation of α -olefins
IN Slany, Michael; Schaefer, Martin; Roeper, Michael
PA BASF AG, Germany
SO Ger. Offen., 14 pp.
CODEN: GWXXBX
DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10228293	A1	20030213	DE 2002-10228293	20020625
				DE 2001-10137079A	20010728
	US 2003069450	A1	20030410	US 2002-197447	20020718
				DE 2001-10137079A	20010728
	CN 1400202	A	20030305	CN 2002-125304	20020723
				DE 2001-10137079A	20010728

AB Dialkyl ketones are manufactured by reductive carbonylation of α -olefins with CO and H in presence of a catalyst system comprising (A) Pd or a Pd compound, (B) a phosphine, (C) protic acid with $pK_a \leq 4.5$ (at 25° in H₂O), and (D) a solubilizable (soluble or colloiddally dispersible) carboxamide as catalyst system stabilizer. For example, reductive carbonylation of ethene with CO and H at 110°/2MPa in the presence of catalyst system containing Pd(OAc)₂, 1,3-p,p'-di(2-phospha-1,3,5,7-tetramethyl-6,9,10-trioxatricyclo[3.3.1.1{3.7}]decyl)propane (preparation given), CF₃CO₂H and EtCONEt₂ gave 404 g/l·h EtCOEt with turnover frequency 2542 mol/mol·h and selectivity 99.2%.

L3 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN

TI Process for making 5-cyanovaleric acid, adipic acid or dimethyl adipate

AN 2002:465961 CAPLUS

DN 137:47592

TI Process for making 5-cyanovaleric acid, adipic acid or dimethyl adipate

IN Bunel, Emilio E.; Clark, David A.

PA E. I. Du Pont de Nemours & Co., USA

SO PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002048094	A1	20020620	WO 2001-US46482	20011203
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
				US 2000-254632PP	20001211
	AU 2002028806	A5	20020624	AU 2002-28806	20011203
				US 2000-254632PP	20001211
				WO 2001-US46482W	20011203
	EP 1341751	A1	20030910	EP 2001-989923	20011203
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				US 2000-254632PP	20001211
				WO 2001-US46482W	20011203

OS MARPAT 137:47592

AB Disclosed in a process for making (1) a compound of the formula NCCH₂CH₂CH₂CH₂CO₂R', wherein R' is H or C₁ to C₁₂ alkyl, or (2) adipic acid or (3) di-Me adipate, using as the substrate, 3-pentenitrile, (2) 3-pentenoic acid or Me 3-pentenoate, resp., by contacting the substrate with carbon monoxide and a nucleophile in the presence of a Group VIII metal, a selected ligand, and an acid promoter. The nucleophile, which (a) an alc. or water, or (b) water or (c) methanol, resp., in the presence of a Group VIII metal, preferably palladium, a selected phosphine ligand, and an acid promoter.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Method and catalysts containing bidentate phosphine ligands for the
carbonylation of pentenoic acid and its derivatives into adipic acid and
its derivatives
AN 2002:449637 CAPLUS
DN 137:33675
TI Method and catalysts containing bidentate phosphine ligands for the
carbonylation of pentenoic acid and its derivatives into adipic acid and
its derivatives
IN Slany, Michael; Schaefer, Martin; Roeper, Michael
PA Basf Aktiengesellschaft, Germany
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002046143	A1	20020613	WO 2001-EP14078	20011203
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	DE 10060313	A1	20020613	DE 2000-10060313A	20001204
	AU 2002035747	A5	20020618	DE 2000-10060313	20001204
				AU 2002-35747	20011203
				DE 2000-10060313A	20001204
				WO 2001-EP14078W	20011203
	EP 1341750	A1	20030910	EP 2001-985838	20011203
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				DE 2000-10060313A	20001204
				WO 2001-EP14078W	20011203

OS MARPAT 137:33675
AB Pentenoic acid and its derivs. (e.g., Me 3-pentenoate) are converted into
adipic acid and its derivs. (e.g., di-Me adipate) by carbonylation of the
substrate (e.g., Me 3-pentenoate) in the presence of CO, a Platinum-Group
metal or compound (e.g., palladium acetate), an optional alc. (e.g.,
methanol), and a bidentate phosphine [e.g., bis(di-tert-butylphosphino)-o-
xylene] ligand .

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Characterization and Dynamics of [Pd(L-L)H(solv)]+, [Pd(L-L)(CH2CH3)]+,
and [Pd(L-L)(C(O)Et)(THF)]+ (L-L = 1,2-(CH2PBut2)2C6H4): Key Intermediates
in the Catalytic Methoxycarbonylation of Ethene to Methylpropanoate
AN 2002:227362 CAPLUS
DN 136:401868
TI Characterization and Dynamics of [Pd(L-L)H(solv)]+, [Pd(L-L)(CH2CH3)]+,
and [Pd(L-L)(C(O)Et)(THF)]+ (L-L = 1,2-(CH2PBut2)2C6H4): Key Intermediates
in the Catalytic Methoxycarbonylation of Ethene to Methylpropanoate
AU Clegg, William; Eastham, Graham R.; Elsegood, Mark R. J.; Heaton, Brian
T.; Iggo, Jonathan A.; Tooze, Robert P.; Whyman, Robin; Zacchini, Stefano
CS Chemistry Department, University of Newcastle, Newcastle-upon-Tyne, NE1
7RU, UK

SO Organometallics (2002), 21(9), 1832-1840
CODEN: ORGND7; ISSN: 0276-7333
PB American Chemical Society
DT Journal
LA English
AB A detailed spectroscopic study has allowed the solution structure and dynamic properties of all the intermediates in the Pd-catalyzed methoxycarbonylation of ethene to be established. $[Pd(L-L)H(solv)]^+$ ($L-L = 1,2-(tBu_2PCH_2)_2C_6H_4$; solv = MeOH, 1a; PrOH, 1b; THF, 1c; EtCN, 1d) is static, and the two inequivalent P atoms do not become equivalent through solvent exchange over all the temps. studied. $[Pd(L-L)Et]^+$, 2, contains a strong β -agostic C-H interaction which is remarkably stable and is not displaced even in strongly coordinating solvents such as EtCN. α and β of the Et group in 2 become equivalent via a stereospecific interchange involving $[Pd(L-L)H(\eta^2-C_2H_4)]^+$ without making the two P atoms equivalent; at higher temps. these two inequivalent P atoms do become equivalent probably via a T-shaped intermediate. For $[Pd(L-L)(C(O)Et)(solv)]^+$, 6, there is no β -agostic C-H interaction and multiple ^{13}C -labeling of the C(O)Et group shows that the inequivalent P atoms become equivalent via movement of the intact C(O)Et group. The crystal structure of the related complex $[Pd(L-L)(C(O)Et)Cl]$ cocrystd. with dibenzylideneacetone was determined

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI The NMR study on trans-trans-dibenzylideneacetone complex of palladium(II)
AN 2001:748738 CAPLUS
DN 136:69945
TI The NMR study on trans-trans-dibenzylideneacetone complex of palladium(II)
AU Sabounchei, Seyyed Javad; Karamei, Kazem
CS Department of Chemistry, Bu-Ali-Sina University, Hamadan, 65174, Iran
SO Asian Journal of Chemistry (2001), 13(4), 1581-1585
CODEN: AJCHEW; ISSN: 0970-7077
PB Asian Journal of Chemistry
DT Journal
LA English
AB The complex $[(L-L)Pd(dba)](I)$; $L-L = 1,2$ -bis(di-tert-butylphosphinomethyl)benzene, dba = trans-trans-dibenzylideneacetone) was prepared and characterized by variable temperature multinuclear NMR spectroscopy.

The coordination environment around Pd was found to be essentially trigonal planar with small dihedral angles between the P_2Pd and PdC_2 planes. Four conformational isomers resulting from restricted motion about the biphenyl bridge and about the carbon-carbon bond to which the carbonyl carbon is attached nearest to the coordinated alkene of the dba of I were observed by variable temperature ^{31}P -NMR on cooling to -80° . Also the resonance peaks observed in the 1H and ^{13}C NMR spectra of I in dichloromethane increased in complexity when cooled to -80° .

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for the carbonylation of pentenenitrile into 5-cyanovaleric acid or its esters
AN 2001:730692 CAPLUS
DN 135:273353
TI Process and catalysts for the carbonylation of pentenenitrile into 5-cyanovaleric acid or its esters
IN Drent, Eit; Jager, Willem Wabe
PA Shell Internationale Research Maatschappij BV, Neth.
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent

LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001072697	A2	20011004	WO 2001-EP2903	20010314
	WO 2001072697	A3	20020516		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
	US 2002045748	A1	20020418	US 2001-804891	20010313
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
	EP 1263713	A2	20021211	EP 2001-923664	20010314
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
				WO 2001-EP2903 W	20010314
	BR 2001009239	A	20021224	BR 2001-9239	20010314
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
				WO 2001-EP2903 W	20010314
	JP 2003528849	T2	20030930	JP 2001-570610	20010314
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
				WO 2001-EP2903 W	20010314

PATENT FAMILY INFORMATION:

FAN 2001:693262

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001068583	A2	20010920	WO 2001-EP2908	20010314
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
				EP 2000-200927 A	20000314
				EP 2000-309654 A	20001101
	US 2001044556	A1	20011122	US 2001-805592	20010313
				EP 2000-200927 A	20000314
				EP 2000-309654 A	20001101
	EP 1263709	A2	20021211	EP 2001-915341	20010314
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, -PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				EP 2000-200927 A	20000314
				EP 2000-309654 A	20001101
				WO 2001-EP2908 W	20010314
	BR 2001009242	A	20021224	BR 2001-9242	20010314
				EP 2000-200927 A	20000314
				EP 2000-309654 A	20001101
				WO 2001-EP2908 W	20010314
	JP 2003527365	T2	20030916	JP 2001-567681	20010314

EP 2000-200927 A 20000314
EP 2000-309654 A 20001101
WO 2001-EP2908 W 20010314

OS MARPAT 135:273353

AB Process to prepare a 5-cyanovaleric acid or its ester by carbonylation of a pentenenitrile, wherein pentenenitrile is reacted with carbon monoxide and water or an alc. in the presence of a catalyst system. The catalyst system comprises (a) a metal of Group VIII or a compound thereof and (b) a bidentate ligand R1(R2)M1RM2(R3)R4 (M1, M2 = P, As, Sb; R = divalent organic bridging group which comprises a chain of 3 to 5 atoms directly connecting the 2 phosphorus atoms, which chain consists of carbon atoms and optionally a nitrogen, oxygen, sulfur, substituted Si; R1-R4 = optionally substituted tertiary-alkyl groups), and (c) an acid having a pKa less than 3, as measured at 18° in an aqueous solution. The process to prepare 5-cyanovaleric acid or ester can be used in a process to prepare epsilon-caprolactam comprising: (i) carbonylation of pentenenitrile to 5-cyanovaleric acid or ester; (ii) reduction of 5-cyanovaleric acid or esters as obtained in step (i) into 6-aminocaproic acid or esters; and (iii) cyclisation of the 6-aminocaproic acid or ester to epsilon-caprolactam.

L3 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Carbonylation of ethylenically unsaturated compounds
AN 2001:693262 CAPLUS
DN 135:244064
TI Carbonylation of ethylenically unsaturated compounds
IN Drent, Eit; Jager, Willem Wabe
PA Shell Internationale Research Maatschappij BV, Neth.
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001068583	A2	20010920	WO 2001-EP2908	20010314
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
				EP 2000-200927 A 20000314	
				EP 2000-309654 A 20001101	
	US 2001044556	A1	20011122	US 2001-805592	20010313
				EP 2000-200927 A 20000314	
				EP 2000-309654 A 20001101	
	EP 1263709	A2	20021211	EP 2001-915341	20010314
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				EP 2000-200927 A 20000314	
				EP 2000-309654 A 20001101	
				WO 2001-EP2908 W 20010314	
	BR 2001009242	A	20021224	BR 2001-9242	20010314
				EP 2000-200927 A 20000314	
				EP 2000-309654 A 20001101	
				WO 2001-EP2908 W 20010314	
	JP 2003527365	T2	20030916	JP 2001-567681	20010314
				EP 2000-200927 A 20000314	
				EP 2000-309654 A 20001101	
				WO 2001-EP2908 W 20010314	

PATENT FAMILY INFORMATION:

FAN 2001:730692

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001072697	A2	20011004	WO 2001-EP2903	20010314
	WO 2001072697	A3	20020516		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
	US 2002045748	A1	20020418	US 2001-804891	20010313
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
	EP 1263713	A2	20021211	EP 2001-923664	20010314
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
	BR 2001009239	A	20021224	WO 2001-EP2903 W	20010314
				BR 2001-9239	20010314
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
	JP 2003528849	T2	20030930	WO 2001-EP2903 W	20010314
				JP 2001-570610	20010314
				EP 2000-200926 A	20000314
				EP 2000-200927 A	20000314
				WO 2001-EP2903 W	20010314

AB Process for the carbonylation of ethylenically unsatd. compds. having ≥ 3 C atoms by reaction with CO and an hydroxyl group-containing compound in the presence of a catalyst system in aprotic solvent, provides carboxylic acids and/or esters. The catalyst system includes (a) a source of Pd cations, (b) a bidentate diphosphine $R_1R_2>PR_3RR_4P<R_5R_6$, where R_1 , R_2 , R_5 and R_6 = optionally substituted organic groups containing a tertiary C atom through which the group is linked to the P atom; R_3 and R_4 = optionally substituted alkylene groups and R = optionally substituted aromatic group, (c) a source of anions derived from an acid having a $pK_a < 3$, as measured at 18° in an aqueous solution. Carbonylation of 2-butene, CO, and MeOH in anisole in the presence of catalytic tert-Bu sulfonic acid, Pd acetate, and 1,2-bis[di(tert-butyl)phosphinomethyl]benzene at 100° for 3 h gave mostly methylpentanoate (97%).

L3 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN

TI Process for the preparation of bisphosphines

AN 1999:613912 CAPLUS

DN 131:214428

TI Process for the preparation of bisphosphines

IN Newman, Paul David; Campbell, Richard Anthony; Tooze, Robert Paul; Eastham, Graham Ronald; Thorpe, Jamie Michael; Edwards, Peter Gerald

PA Imperial Chemical Industries PLC, UK

SC PCT Int. Appl., 15 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9947528	A1	19990923	WO 1999-GB797	19990316

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2323906	AA	19990923	GB 1998-5348	A 19980316
			CA 1999-2323906	19990316
			GB 1998-5348	A 19980316
AU 9928475	A1	19991011	WO 1999-GB797	W 19990316
AU 742029	B2	20011213	AU 1999-28475	19990316
			GB 1998-5348	A 19980316
			WO 1999-GB797	W 19990316
EP 1064288	A1	20010103	EP 1999-909108	19990316
EP 1064288	B1	20030502		
R: BE, DE, ES, FR, GB, IT, NL				
			GB 1998-5348	A 19980316
			WO 1999-GB797	W 19990316
JP 2002506872	T2	20020305	JP 2000-536723	19990316
			GB 1998-5348	A 19980316
			WO 1999-GB797	W 19990316
ZA 2000004914	A	20010810	ZA 2000-4914	20000914
			GB 1998-5348	A 19980316
US 6376715	B1	20020423	US 2000-646049	20001201
			GB 1998-5348	A 19980316
			WO 1999-GB797	W 19990316

OS MARPAT 131:214428

AB A method of manufacturing a compound of general formula

(R3-C)2P-L1-X-L2-P(C-R3)2,

in which each R is independently a pendant, optionally substituted, organic group through which the group is linked to tertiary carbon atom C; L1, L2 are independently a linking group selected from an optionally substituted lower alkylene chain connecting the resp. phosphorus atom to the group X and X is a bridging group comprising an optionally substituted aryl moiety to which the phosphorus atoms are linked on available adjacent carbon atoms, comprises: (i) reacting together a compound of formula H-L1-X-L2-H with an organometallic compound to form an intermediate compound of formula M-L1-X-L2-M, where M is an alkali metal atom; (ii) reacting said intermediate compound with a compound of formula (R3-C)2P-A, where A is a halogen atom, to form said compound of general formula (R3-C)2P-L1-X-L2-P-(C-R3)2. M is preferably lithium, potassium or sodium and the intermediate compound may be isolated or not. The reaction (i) may advantageously be carried out in the presence of a complexing agent such as tetramethylethylenediamine. Thus, lithiation of ortho-xylene with BuLi in hexane in the presence of Me2NCH2CH2NMe2 followed by treatment of di-tert-butylchlorophosphine gave good yields of (di-tert-butylphosphino)-o-xylene. The prepared compds. are useful as a component of a catalyst system which may be used in carbonylation of olefins.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

LB ANSWER 10 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN

TI Process and Palladium-bidentate phosphine ligand catalysts for the carbonylation of ethylene into propionic acid and its esters

AN 1998:635736 CAPLUS

DN 129:232317

TI Process and Palladium-bidentate phosphine ligand catalysts for the carbonylation of ethylene into propionic acid and its esters

IN Pearson, Jean Margaret; Hadden, Raymond Anthony

PA Imperial Chemical Industries PLC, UK

SO PCT Int. Appl., 17 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI.	WC 9841495	A1	19980924	WO 1998-GB629	19980227
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
	AU 9866286	A1	19981012	GB 1997-5699	A 19970319
	AU 737772	B2	20010830	AU 1998-66286	19980227
				GB 1997-5699	A 19970319
				WO 1998-GB629	W 19980227
	EP 970038	A1	20000112	EP 1998-908202	19980227
	EP 970038	B1	20020410		
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, RO			
				GB 1997-5699	A 19970319
				WO 1998-GB629	W 19980227
	BR 9808354	A	20000523	BR 1998-8354	19980227
				GB 1997-5699	A 19970319
				WO 1998-GB629	W 19980227
	JP 2001517218	T2	20011002	JP 1998-540218	19980227
				GB 1997-5699	A 19970319
				WO 1998-GB629	W 19980227
	AT 215928	E	20020415	AT 1998-908202	19980227
				GB 1997-5699	A 19970319
				WO 1998-GB629	W 19980227
	PT 970038	T	20020731	PT 1998-98908202	19980227
				GB 1997-5699	A 19970319
	ES 2172114	T3	20020916	ES 1998-908202	19980227
				GB 1997-5699	A 19970319
	ZA 9801982	A	19980921	ZA 1998-1982	19980309
				GB 1997-5699	A 19970319
	US 6284919	B1	20010904	US 1999-396637	19990915
				GB 1997-5699	A 19970319
				WO 1998-GB629	A19980227
	US 2001051745	A1	20011213	US 2001-885187	20010621
	US 6489506	B2	20021203		
				GB 1997-5699	A 19970319
				US 1999-396637	A19990915

OS MARPAT 129:232317

AB Ethylene is carbonylated into propanoic acid and its esters (e.g., Me propionate) in high yield and selectivity by its liquid-phase carbonylation, in the presence of a catalyst system comprising Pd or a Pd compound, a bidentate phosphine ligand [e.g., 1,2-bis(di-tert-butylphosphinomethyl)benzene], and a source of anions (e.g., methanesulfonic acid), and in the presence of a source of hydroxyl groups (e.g., methanol). The carbonylation is carried out using a molar ratio of ethylene to carbon monoxide greater than 1:1, and preferably greater than 5:1; these higher ratios of ethylene to carbon monoxide result in increased catalyst turnover nos.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN

TI Carbonylation of ethylene and stable catalyst system containing bidentate phosphine compounds for
 AN 1996:527331 CAPLUS
 DN 125:145592
 TI Carbonylation of ethylene and stable catalyst system containing bidentate phosphine compounds for
 IN Tooze, Robert Paul; Eastham, Graham Ronald; Whiston, Keith; Wang, Xiao Lan
 PA Imperial Chemical Industries Plc, UK
 SO PCT Int. Appl., 14 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

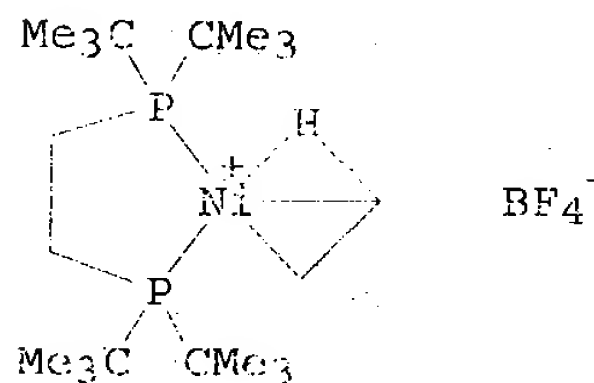
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9619434	A1	19960627	WO 1995-GB3021	19951222
	W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LT, LV, MD, MG, MN, MW, NC, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, US, UZ, VN				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2207672	AA	19960627	GB 1994-25911 A	19941222
				CA 1995-2207672	19951222
				GB 1994-25911 A	19941222
	AU 9643095	A1	19960710	AU 1996-43095	19951222
	AU 701935	B2	19990211		
				GB 1994-25911 A	19941222
				WO 1995-GB3021 W	19951222
	EP 799180	A1	19971008	EP 1995-941792	19951222
	EP 799180	B1	19990630		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
				GB 1994-25911 A	19941222
				WO 1995-GB3021 W	19951222
	BR 9510249	A	19971104	BR 1995-10249	19951222
				GB 1994-25911 A	19941222
				WO 1995-GB3021 W	19951222
	CN 1171098	A	19980121	CN 1995-197050	19951222
	CN 1073546	B	20011024		
				GB 1994-25911 A	19941222
	HU 77016	A2	19980302	HU 1997-2202	19951222
	HU 215407	B	19981228		
				GB 1994-25911 A	19941222
	JP 10511034	T2	19981027	JP 1995-519611	19951222
				GB 1994-25911 A	19941222
				WO 1995-GB3021 W	19951222
	AT 181725	E	19990715	AT 1995-941792	19951222
				GB 1994-25911 A	19941222
	ES 2133837	T3	19990916	ES 1995-941792	19951222
				GB 1994-25911 A	19941222
	NZ 297842	A	20000128	NZ 1995-297842	19951222
				GB 1994-25911	19941222
				WO 1995-GB3021	19951222
	CZ 288904	B6	20010912	CZ 1997-1932	19951222
				GB 1994-25911 A	19941222
	US 6348621	B1	20020219	US 1999-860159	19991013
				GB 1994-25911 A	19941222
				WO 1995-GB3021 W	19951222

AB Ethylene is reacted with CO in the presence of an OH source, e.g., an alc., and a catalyst system a Group VIII metal (compound) and a bidentate phosphine compound, e.g., bis(di-tert-butylphosphino)-o-xylene (I). Use of the bidentate phosphine compds. provides remarkably stable catalysts which require little replenishment, leads to high reaction rates, minimizes impurity formation at high conversions. Thus, ethylene was carbonylated in the presence of MeOH and a catalyst system comprising palladium acetate 0.1, I 0.3, and methanesulfonic acid 0.24 mmol, with reaction rate 40,000

and selectivity 99.95 with no Pd precipitation

L3 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Preparation and fluxional behavior of η^3 -methylbenzyl platinum and palladium complexes
AN 1993:213260 CAPLUS
DN 118:213260
TI Preparation and fluxional behavior of η^3 -methylbenzyl platinum and palladium complexes
AU Craswell, Louise E.; Spencer, John L.
CS Dep. Chem. Appl. Chem., Univ. Salford, Salford, M5 4WT, UK
SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1992), (24), 3445-52
CODEN: JCDTBI; ISSN: 0300-9246
DT Journal
LA English
AB Protonation of the complexes $[M(\eta^2\text{-CH}_2\text{:CHPh})(\text{L-L})]$ [$M = \text{Pt}$, $\text{L-L} = (\text{C}_6\text{H}_{11})_2\text{P}(\text{CH}_2)_n\text{P}(\text{C}_6\text{H}_{11})_2$, $n = 2$ or 3 (1a or 1c), $\text{But}_2\text{P}(\text{CH}_2)_n\text{PBu}_2$, $n = 2$ or 3 (1f or 1g) and $\text{But}_2\text{PCH}_2\text{C}_6\text{H}_4\text{CH}_2\text{PBut}_2$ (1h)] with HBF_4 in di-Et ether affords a series of complexes, $[M(\eta^3\text{-MeCHPh})(\text{L-L})][\text{BF}_4]$ (2a-2h), which contain an η^3 -methylbenzyl ligand. The complexes 2a-2h were characterized by ^1H , ^{13}C and ^{31}P NMR spectroscopy and all except 2a and 2f were found to undergo intramol. rearrangement in solution at or below room temperature. A mechanism is proposed, on the basis of variable-temperature NMR studies, that involves an η^3 σ conversion coupled with single-bond rotation and β -elimination/hydride migration processes. For 2a-2e, the influence of the chelating diphosphine on the nature of the η^3 -benzyl interaction was investigated by ^{31}P - $\{^1\text{H}\}$ NMR spectroscopy and the largest diphosphines induce the most asym. η^3 interaction. Similarly, the activation barriers to intramol. rearrangement are lowest for the complexes with the largest diphosphine ligands.

L3 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
TI Synthesis of coordinatively unsaturated diphosphine nickel(II) and palladium(II) β -agostic ethyl cations: x-ray crystal structure of $[\text{Ni}[\text{tert-Bu}_2\text{P}(\text{CH}_2)_2\text{PBu-tert}_2](\text{C}_2\text{H}_5)][\text{BF}_4]$
AN 1992:59613 CAPLUS
DN 116:59613
TI Synthesis of coordinatively unsaturated diphosphine nickel(II) and palladium(II) β -agostic ethyl cations: x-ray crystal structure of $[\text{Ni}[\text{tert-Bu}_2\text{P}(\text{CH}_2)_2\text{PBu-tert}_2](\text{C}_2\text{H}_5)][\text{BF}_4]$
AU Conroy-Lewis, Fiona M.; Mole, Laura; Redhouse, Alan D.; Litster, Stephen A.; Spencer, John L.
CS Dep. Chem. Appl. Chem., Univ. Salford, Salford, M5 4WT, UK
SO Journal of the Chemical Society, Chemical Communications (1991), (22), 1601-3
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
OS CASREACT 116:59613
GI



AB Protonation of $[M(L_2)(\eta^2-C_2H_4)]$ (L_2 = chelating diphosphine; M = Ni, Pd) with HBF_4 affords a series of cations $[M(L_2)(C_2H_5)]^+$ characterized as β -agostic Et complexes by NMR spectroscopy and x-ray structure anal. E.g., the structure of I was determined by crystallog.

L3 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN

TI Ligand control of agostic metal-hydrogen-carbon three-center, two electron bonding in bicyclo[2.2.1]hept-2-yl complexes of platinum and palladium. X-ray crystal structures of $[Pt(\eta^2-C_7H_{10})\{tertBu_2P(CH_2)_2PtertBu_2\}]$ and $[Pt(C_7H_{11})\{tertBu_2P(CH_2)_2PtertBu_2\}][BPh_4]$

AN 1991:429597 CAPLUS

DN 115:29597

TI Ligand control of agostic metal-hydrogen-carbon three-center, two electron bonding in bicyclo[2.2.1]hept-2-yl complexes of platinum and palladium. X-ray crystal structures of $[Pt(\eta^2-C_7H_{10})\{tertBu_2P(CH_2)_2PtertBu_2\}]$ and $[Pt(C_7H_{11})\{tertBu_2P(CH_2)_2PtertBu_2\}][BPh_4]$

AU Carr, Nicholas; Dunne, Barry J.; Mole, Laura; Orpen, A. Guy; Spencer, John L.

CS Dep. Chem. Appl. Chem., Univ. Salford, Salford, M5 4WT, UK

SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1991), (150th Anniv. Celebration Issue), 863-71

CODEN: JCOTBI; ISSN: 0300-9246

DT Journal

LA English

OS CASREACT 115:29597

AB The reaction of noncoordinating acids with the alkane complexes $M(\eta^2-C_7H_{10})(G-L)$ [I; M = Pt, $L-L = (C_6H_{11})_2P(CH_2)_2P(C_6H_{11})_2$, $(C_6H_{11})_2P(CH_2)_3P(C_6H_{11})_2$, $(Me_3C)_2P(CH_2)_2P(CMe_3)_2$ (II), $(Me_3C)_2P(CH_2)_3P(CMe_3)_2$, $o-[(Me_3C)_2PCH_2]C_6H_4$] and I [M = Pd; $L-L = (C_6H_{11})_2P(CH_2)_2P(C_6H_{11})_2$, $(Me_3C)_2P(CH_2)_2P(CMe_3)_2$, $o-[(Me_3C)_2PCH_2]C_6H_4$] gives a series of cationic bicyclo[2.2.1]hept-2-yl complexes in which the otherwise electron-deficient metal center is stabilized by a 3-center 2-electron (agostic) interaction with the exo -2-CH bond. The complexes were characterized by 1H , ^{13}C , and ^{31}P NMR, and for II and its agostic complex III, by x-ray crystallog. In II the 2-norbornane is bound to the Pt in a normal in-planar η^2 made with thermal Pt-C distances. For III crystallog. shows a long Pt-(C β) constant which is bridged by a H atom forming the agostic bond; Pt-C(α) is shortened. The Pt-P bond trans to the weak agostic bond is insignificantly shorter than cis-Pt-P bond; this asymmetry is reflected in the ^{31}P NMR. The extent of agostic interaction, as indicated by NMR, depends on the bite angle of the diphosphine and the bulk substituents on P; the smallest diphosphines induces the strongest M...H...C interaction. All of the agostic complexes undergo a rapid intramol. rearrangement on the NMR time scale, at room temperature, involving p-elimination and alkene rotation. The ^{31}P maleic remain

nonequiv. at $\leq 300K$.

L3 ANSWER 15 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN

TI Control of intramolecular β -hydrogen migration in coordinatively unsaturated (diphosphine)platinum ethyl cations

AN 1991:43147 CAPLUS

DN 114:43147

TI Control of intramolecular β -hydrogen migration in coordinatively unsaturated (diphosphine)platinum ethyl cations

AU Mole, Laura; Spencer, John L.; Carr, Nicholas; Orpen, A. Guy

CS Dep. Chem. Appl. Chem., Univ. Salford, Salford, M5 4WT, UK

SO Organometallics (1991), 10(1), 49-52

CODEN: ORGND7; ISSN: 0276-7333

DT Journal

LA English

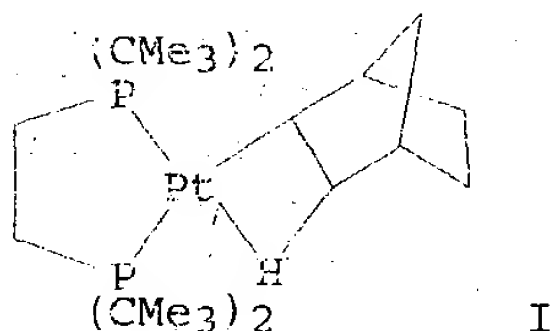
AB Protonation of the complexes $[Pt(C_2H_5)_2L_2]$ or $[Pt(\eta^2-C_2H_4)L_2]$ (L_2 = o -($tert$ -Bu $_2$ PCH $_2$) $_2$ C $_6$ H $_4$ (dbpx), $tert$ -Bu $_2$ P(CH $_2$) $_3$ P(Bu- $tert$) $_2$ (dbpp) and $tert$ -Bu $_2$ P(CH $_2$) $_2$ (Bu- $tert$) $_2$ (dbpe)) with $HBF_4 \cdot OEt_2$ or

HSF4·OMe₂ affords the complexes [Pt(C₂H₅)(dbpx)][BF₄] (I), [Pt(C₂H₅)(dbpp)][BF₄] (II), and [PtH(η²-C₂H₄)(dbpe)][BF₄] (III), resp. The new complexes were characterized by ¹H, ¹³C and ³¹P variable temperature

NMR

spectroscopy and in the case of [Pt(C₂H₅)(dbpp)][CB₁₁H₁₂], which was prepared by protonation of [Pt(C₂H₅)₂(dbpp)] with HCB₁₁H₁₂, by and x-ray crystallog. study. The complexes I and II exhibit a two-electron, three-center Pt-H-C agostic bond whereas III has a cis-ethene-hydride ground state structure. Thus, the size of the chelating diphosphine ligand controls the extent of β-hydrogen transfer from carbon to platinum. The NMR spectroscopic studies show that all three cations undergo two low energy fluxional processes (ΔG_{dbldag} ≤ 8 ± 1.5 Kcal mol⁻¹) in soln: (a) agostic Me rotation and (b) β-elimination/ethene rotation/hydride migration. A combination of these processes scrambles all five protons and both carbon atoms.

L3 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2004 ACS on STN
 TI Coordinatively unsaturated diphosphine platinum(II) alkyl cations: a new class of β-agostic complexes
 AN 1989:534423 CAPLUS
 DN 111:134423
 TI Coordinatively unsaturated diphosphine platinum(II) alkyl cations: a new class of β-agostic complexes
 AU Carr, Nicholas; Dunne, Barry J.; Orpen, A. Guy; Spencer, John L.
 CS Dep. Chem. Appl. Chem., Univ. Salford, Salford, M5 4WT, UK
 SO Journal of the Chemical Society, Chemical Communications (1988), (14), 926-8
 CODEN: JCCCAT; ISSN: 0022-4936
 DT Journal
 LA English
 OS CASREACT 111:134423
 GI



AB Treatment of tris(norbornene)platinum with diphosphines and subsequent protonation affords a series of cationic complexes [Pt(C₇H₁₁)(L₂)]⁺ (L₂ = peralkyldiphosphine) in which the norbornyl ligand binds to platinum via α-alkyl and β-C-H agostic interactions; the strength of the latter bond varies and has been characterized by NMR and by an x-ray structure anal. of alkylplatinum complex I + BPh₄⁻.

=> ?valeric acid

23270 ?VALERIC
 3777055 ACID
 1421082 ACIDS
 4240982 ACID

(ACID OR ACIDS)

L4 21568 ?VALERIC ACID
 (?VALERIC(W)ACID)

=> d his

FILE 'REGISTRY' ENTERED AT 08:27:02 ON 11 FEB 2004

L1 STRUCTURE UPLOADED
L2 1 SEARCH L1 EXACT FULL

FILE 'CAPLUS' ENTERED AT 08:28:32 ON 11 FEB 2004

L3 16 L2
L4 21568 ?VALERIC ACID

=> l3 and l4

L5 3 L3 AND L4

=> d l5 1-3 ti

L5 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for making a 5-cyanovaleric acid ester, adipic acid or dimethyl adipate

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process for making 5-cyanovaleric acid, adipic acid or dimethyl adipate

L5 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for the carbonylation of pentenenitrile into 5-cyanovaleric acid or its esters

=> d l5 1-3 ti fbib abs

L5 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process and catalysts for making a 5-cyanovaleric acid ester, adipic acid or dimethyl adipate

AN 2003:435358 CAPLUS

DN 139:7366

TI Process and catalysts for making a 5-cyanovaleric acid ester, adipic acid or dimethyl adipate

IN Bunel, Emilio E.; Clark, David A.

PA USA

SO U.S. Pat. Appl. Publ., 6 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003105348	A1	20030605	US 2001-997506	20011119
				US 2001-997506	20011119

OS MARPAT 139:7366

AB In a process for making (1) a 5-cyanovaleric acid ester NCCH₂CH₂CH₂CH₂CO₂R' (R' = H, C1-12 alkyl; e.g., Me 5-cyanovalerate), or (2) adipic acid, or (3) di-Me adipate, one uses as the substrate (A) 3-pentenenitrile, (B) 3-pentenoic acid, or (C) Me 3-pentenoate, resp., by contacting the substrate with carbon monoxide and a nucleophile in the presence of a Group VIII metal (e.g., palladium), a bidentate diphosphine ligand [e.g., 1,2-bis(di-tert-butylphosphinomethyl)benzene], and an acid promoter (e.g., methanesulfonic acid).

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
TI Process for making 5-cyanovaleric acid, adipic acid or dimethyl adipate

AN 2002:465961 CAPLUS

DN 137:47592

TI Process for making 5-cyanovaleric acid, adipic acid or dimethyl adipate

IN Bunel, Emilio E.; Clark, David A.
PA E. I. Du Pont de Nemours & Co., USA
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002048094	A1	20020620	WO 2001-US46482	20011203
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	AU 2002028806	A5	20020624	US 2000-254632PP	20001211
				AU 2002-28806	20011203
				US 2000-254632PP	20001211
				WO 2001-US46482W	20011203
	EP 1341751	A1	20030910	EP 2001-989923	20011203
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
				US 2000-254632PP	20001211
				WO 2001-US46482W	20011203

OS MARPAT 137:47592

AE Disclosed in a process for making (1) a compound of the formula $\text{NCCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{R}'$, wherein R' is H or C_1 to C_{12} alkyl, or (2) adipic acid or (3) di-Me adipate, using as the substrate, 3-pentenitrile, (2) 3-pentenoic acid or Me 3-pentenoate, resp., by contacting the substrate with carbon monoxide and a nucleophile in the presence of a Group VIII metal, a selected ligand, and an acid promoter. The nucleophile, which (a) an alc. or water, or (b) water or (c) methanol, resp., in the presence of a Group VIII metal, preferably palladium, a selected phosphine ligand, and an acid promoter.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN

TI Process and catalysts for the carbonylation of pentenenitrile into 5-cyanovaleric acid or its esters

AN 2001:730692 CAPLUS

DN 135:273353

TI Process and catalysts for the carbonylation of pentenenitrile into 5-cyanovaleric acid or its esters

IN Drent, Eit; Jager, Willem Wabe

PA Shell Internationale Research Maatschappij BV, Neth.

SO PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001072697	A2	20011004	WO 2001-EP2903	20010314
	WO 2001072697	A3	20020516		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,			

ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
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 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

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AB Process to prepare a 5-cyanovaleric acid or its ester by
 carbonylation of a pentenenitrile, wherein pentenenitrile is reacted with
 carbon monoxide and water or an alc. in the presence of a catalyst system.
 The catalyst system comprises (a) a metal of Group VIII or a compound
 thereof and (b) a bidentate ligand R1(R2)M1RM2(R3)R4 (M1, M2 = P, As, Sb;
 R = divalent organic bridging group which comprises a chain of 3 to 5 atoms
 directly connecting the 2 phosphorus atoms, which chain consists of carbon

atoms and optionally a nitrogen, oxygen, sulfur, substituted Si; R1-R4 = optionally substituted tertiary-alkyl groups), and (c) an acid having a pKa less than 3, as measured at 18° in an aqueous solution. The process to prepare 5-cyanovaleric acid or ester can be used in a process to prepare ϵ -caprolactam comprising: (i) carbonylation of pentenenitrile to 5-cyanovaleric acid or ester; (ii) reduction of 5-cyanovaleric acid or esters as obtained in step (i) into 6-aminocaproic acid or esters; and (iii) cyclisation of the 6-aminocaproic acid or ester to ϵ -caprolactam.